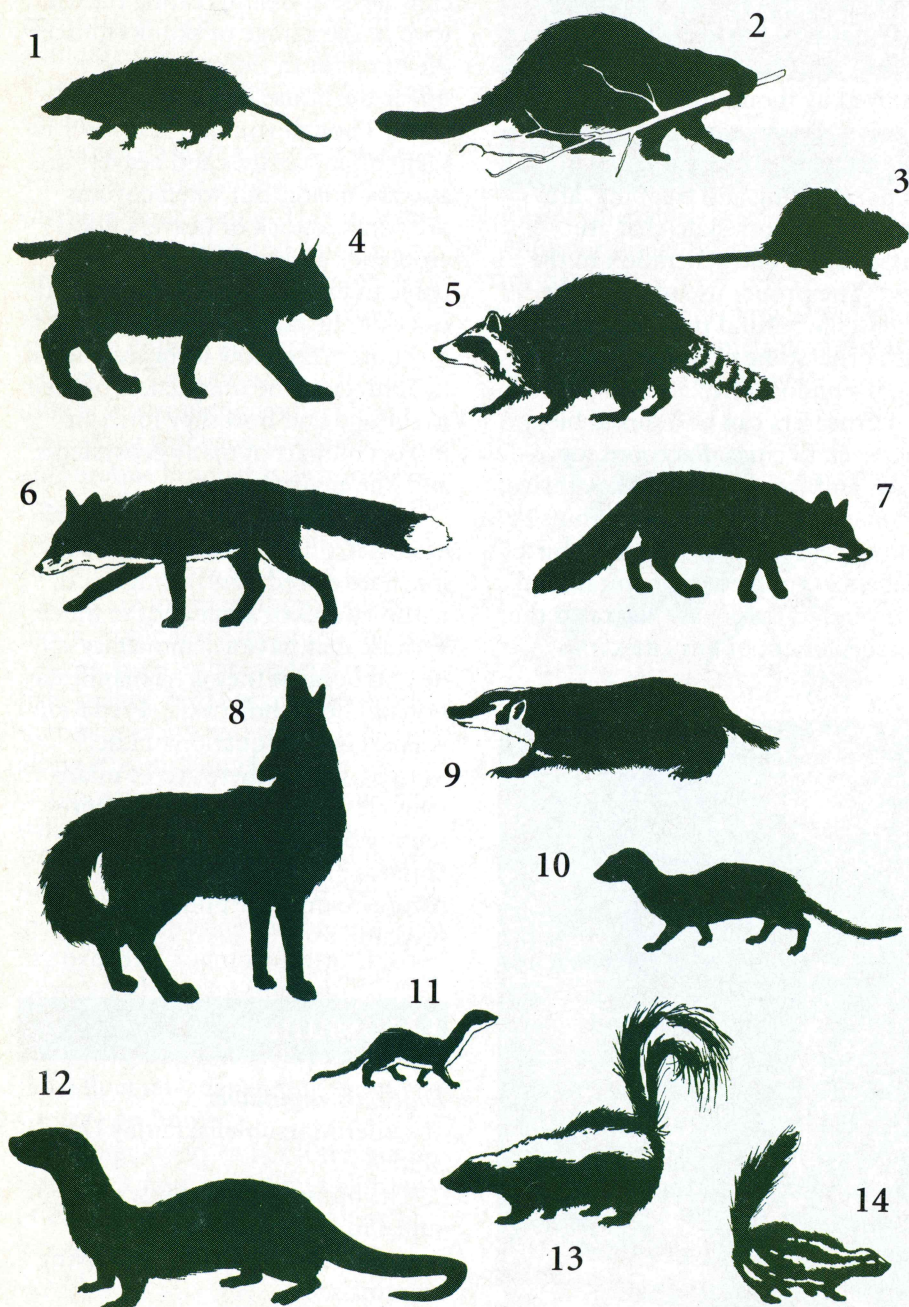




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INTRODUCTION TO MISSOURI'S FURBEARERS

BY DAVE HAMILTON



Furbearers are widespread in Missouri. They are known as a group of mammals with some common characteristics. Much like other aggregations of creatures, such as waterfowl, upland game, or cavity nesters, the furbearers of Missouri are a diverse group of animals.

In one sense, all mammals are furbearers, since hair is a uniquely mammalian characteristic. Like specialized teeth, mammary and other skin glands, warm bloodedness (endothermy), and a four-chambered heart, hair is a feature of mammals that separates them (and us) from other vertebrates.

The mammal's coat of hair, or pelage, serves primarily as insulation to keep in body warmth or to retard absorption of heat from the sun. Specialized hairs and coat patterns sometimes aid in concealment, buoyancy, tactile perception (like whiskers), protection or communication.

Pelts (furred skins) have traditionally been valued for human garments and accessories, and mammals hunted or trapped primarily for their pelts are those which are usually called "furbearers." This is somewhat of a utilitarian definition, and while convenient, focuses on only a single aspect of this diverse array of mammals.

Furbearers are also well known for their destructiveness, their dreadful diseases, their sporting qualities, their sometimes inquisitive nature and the scientific interest they hold for naturalists.

The management of these animals by the Conservation Depart-

Animals hunted or trapped for the pelts are called furbearers. They share the physical qualities of mammals, but have unique habits. These silhouettes (left) are drawn to the same scale. 1, Opossum; 2, Beaver; 3, Muskrat; 4, Bobcat; 5, Raccoon; 6, Red Fox; 7, Gray Fox; 8, Coyote; 9, Badger; 10, Mink; 11, Long-tailed Weasel; 12, River Otter; 13, Striped Skunk; 14, Eastern Spotted Skunk.

ment not only includes regulation of an annual harvest, but also problem wildlife control, disease monitoring, and attention to very differing, and often contradictory, attitudes by people.

Furbearers have been hunted in North America for more than 11,000 years for food and clothing. The values of these furs changed rather dramatically, however, when European markets sought them. This early demand, most prevalent during the 16th and 17th century, revolved primarily around beaver, which was tremendously in vogue among the wealthy in parts of Europe.

In Missouri, fur was the first important cash crop, and the city of St. Louis can trace its origin to the establishment of a trading post by Pierre Laclede near the junction of the Mississippi and Missouri rivers. The strategically located post became the hub of the fur shipping activities of voyagers, who traded blankets, rifles and various metal wares for beaver pelts, bear skins and bear grease, deer hides and a wide assortment of pelts of foxes, raccoons, river otters, and even bison robes.

Furs were floated downstream via the Mississippi River to New Orleans and shipped to Europe. St. Louis was considered the fur capital of the world for many years.

Furbearers, like most wild mammals, are often secretive and reclusive. Some live in remote forested regions and avoid contact with people. Others are primarily nocturnal or are semiaquatic and are rarely seen except by hunters, trappers and others who spend time outdoors. For further information on furbearers you may also want to consult *The Wild Mammals of Missouri* by the late Charles W. Schwartz and his wife Elizabeth (University of Missouri Press).

Missouri has short, mid-winter hunting and trapping seasons. Trapping, hunting raccoons with well-bred hounds, pursuing foxes and coyotes and predator calling are still enjoyed by thousands of Missourians every year and provide important secondary income to some. Hunting and trapping are rich in tradition, skills that are passed from one generation to the next. The proper use of annually renewable natural resources forms the cornerstone of wildlife management's philosophy.

Furbearers can be a mixed blessing, even in cities. Raccoons, opossums and striped skunks may thrive, often eating food from trash bins or taking pet food and seed from bird feeders to supplement natural foods.

Even red foxes have tolerated the encroachment of our cities into

their prime habitats—lawns and low shrubs in residential landscapes team with moles and small rodents, just the sort of meals to keep a fox in the neighborhood. Also, cities offer yet another advantage to the fox—no coyotes. In the wild, coyotes compete with foxes, and do not allow them to share territories. Even though coyotes are adaptable and bold, they usually avoid densely built cities in the Midwest.

People who live in cities may be happy to share their neighborhoods with wildlife, but those who experience raccoons denning in their chimneys, opossums eating the cat food in the garage or skunks under the porch or in the crawlspace under the house may not be so tolerant. Though you may not see them often, coyotes and beavers are also abundant. But when coyotes prey on livestock or beavers flood croplands and forests or cut valuable trees, they are a nuisance that can cost the taxpayers money.

Those who know furbearers learn to appreciate the uniqueness of their livelihood and how they form an important part of many ecosystems and our environment.

Paul Errington, a famous wildlife ecologist, once wrote, "In my opinion, native predators belong in our natural outdoor scenes not so much because they have a ... monetary value ... as because they are a manifestation of Life's wholeness ... Predation is a part of the Equation of Life."

In Missouri, there are 14 mammals classified as furbearers representing 3 orders and 7 families. Some are herbivores, some carnivores...some are prey, others are predators.

Opossum

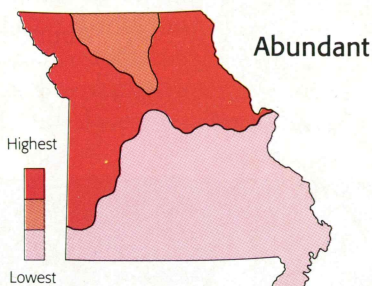
Didelphis virginiana

Order Marsupialia, family Didelphidae.

The opossum is the only marsupial in North America, and is among the most primitive of living mammals.



Jim Grace



Characteristics: The opossum is about the size of a house cat, but the body is stouter, ranging 15 to 20 inches with a tail of 9 to 15 inches. It has short legs with a pointed nose and a white face, black ears with a white tip and a scaly, ratlike tail that is round and adaptable for grasping (prehensile).

Females are smaller than males, and have a pouch on the belly for carrying small young. The underfur is white at the base and black at the tip and is penetrated by longer, coarse white guard hairs, giving the animal a grayish appearance.

Habits: The opossum is usually only active at night, and is often seen along highways in the glare of automobile headlights as it feeds on traffic-killed animals. It is one of the most adaptable animals in North America, and has a varied diet. Insects are the most important foods, but it also eats fruits, crayfish, worms, frogs, salamanders, dead fish, snakes, bird eggs, mice, small rabbits, carrion and snails. It lives along streams and in woods.

Opossums are not aggressive and will climb trees when pursued. When frightened, they will exhibit a brief nervous shock, called "playing possum," exposing their teeth, rolling over and feigning death. Opossums are abundant in Missouri, sometimes with densities of 100 to 200 per square mile, but populations fluctuate, depending upon winter conditions.

Young: Up to 14 per litter; gestation of 13 days, sometimes with two litters per year. Entire litter may fit in a teaspoon—born blind and naked.



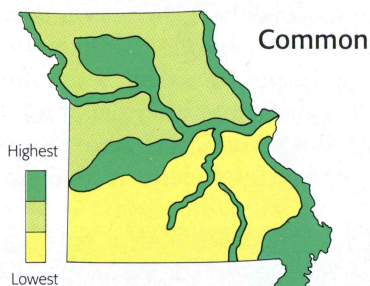
Jim Rathert

Beaver

Castor canadensis

Order Rodentia, family Castoridae.

The beaver is the largest rodent in North America, sometimes reaching 60 to 70 pounds or more.



Characteristics: A large, rotund rodent. The beaver is clumsy on land, but an excellent swimmer. Beavers are readily identified by their wide, flat leathery tails which can be used to sound a warning when slapped on the water. Beavers can be chocolate brown or sometimes reddish brown. The beaver has a dense, soft undercoat overlaid with longer, stiffer guard hairs. It has small eyes and ears, and a large jaw and nose. The hind feet are webbed for swimming.

Habits: Beavers live in streams, rivers, lakes, ponds and swamps.

Sometimes dams are constructed with sticks, rocks, logs and mud. The pond they build provides them protection; they build a den into the side of the bank with an underwater entrance.

Beavers are strictly vegetarians, eating leaves, twigs and the inner

Key to Distribution Maps:

ABUNDANT means frequently found in large numbers and in a wide variety of habitats.

LOCALLY ABUNDANT means consistently found in large numbers when local habitat conditions are ideal.

COMMON means consistently found in many habitats but each animal may require a large territory.

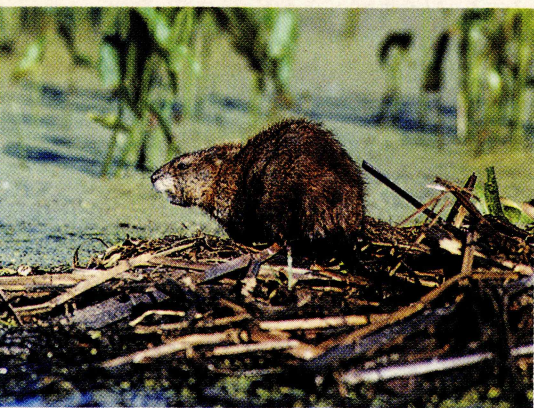
LOW DENSITY means animals are found in low numbers in ideal habitat; each animal requires a large territory.

RARE means found only in specific habitat under ideal conditions; habitat may be widely scattered.

bark of trees. They store sticks and limbs underwater in the fall so they can feed on this cache even when the pond freezes over.

Beavers usually mate for life, and breed in January. The three to five kits are born in spring and stay with the colony for nearly two years.

Beavers have a pair of front teeth called incisors that never wear out. The outer surface is hard enamel and the inner tooth is softer. These teeth grow continuously, and the beaver must chew to keep them sharp and worn down properly. The beaver can cut trees of enormous size to eat the small branches at the top.

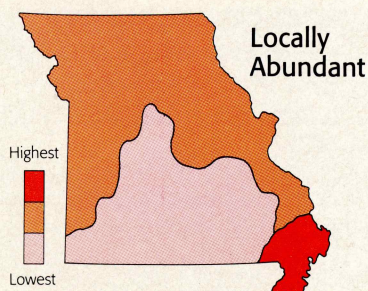


Jim Rathert

Muskrat

Ondatra zibethica

Order Rodentia, family Cricetidae.



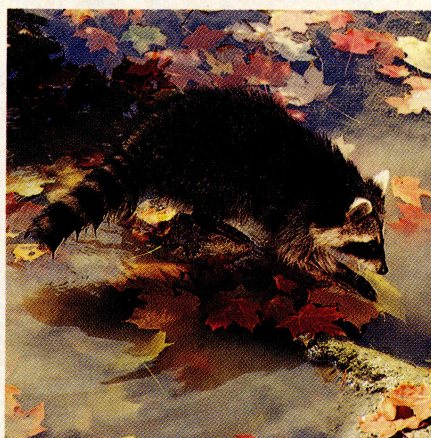
Characteristics: Although appearing stocky and even cumbersome on land, this 2.5-pound rodent is well-suited to an aquatic environment. The front legs are short and heavily clawed for feeding and digging, and the powerful partially web-footed hind legs help in

swimming. The muskrat has a naked tail which is flattened vertically. The underfur is virtually waterproof and provides buoyancy for effortless swimming.

Muskrats have respiratory controls and can stay submerged for nearly 20 minutes. They live in bank dens near still or slow running water with vegetation in the water and along the shore—they are primarily vegetarians, and love roots and tubers of aquatic plants and stems of succulent bankside vegetation. Sometimes they eat clams and mussels. They may live in huts made from cattails and mud.

The muskrat is prolific, and may have up to three litters during the summer. The first litter, sometimes 12 to 15, are born in March, and can have their own litter before fall arrives. If a pair of muskrats and their offspring all survived to breed as soon as possible, they could produce over 600 muskrats in just 2 years.

Luckily, lots of predators such as hawks, owls, minks, weasels and foxes prey on muskrats to keep their numbers in check. When muskrats become too abundant and they eat all of the food available, a situation called an eat-out, they die of starvation and predation in large numbers until their food plants recover.

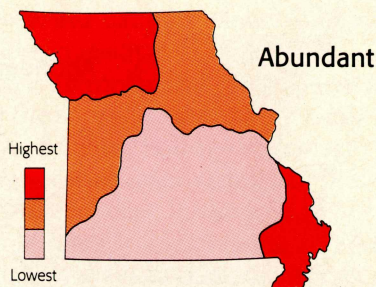


Maslowski Photo

Raccoon

Procyon lotor

Order Carnivora, family Procyonidae.



Characteristics: The raccoon is probably the most recognizable of all furbearers with its black facial mask, ringed tail, and medium-length, dense fur. It weighs 12 to 25 pounds, with some of even 30 pounds or more. The raccoon's eyes, ears, nose and front paws are well suited to nocturnal feeding.

The front paws have a well-developed sense of touch and dexterity for catching and holding prey items in and around water. The raccoon has good night vision and a keen sense of smell. Raccoons are good climbers, and are common around campgrounds.

Habits: Raccoons are omnivorous and opportunistic, and have a seasonal diet dictated by protein needs and the foods available. Crayfish, birds, eggs, fish, young rabbits and muskrats are used by females in spring to ensure adequate development of their pre-natal young. Raccoons eat fruits, vegetables and berries in summer, and are especially fond of plums, mulberries and sweet corn.

Raccoons feed almost continually during the fall to build critical fat reserves for the coming winter. Acorns are heavily used when available. Raccoons will den during periods of extreme cold, and may not venture out for several weeks. They can use a wide variety of den sites such as hollow trees, abandoned buildings, dens in banks, woodpiles, hay stacks and unused chimneys.

Raccoons mate in January and three or four young are born in April or May. Family groups are quite sociable and often den together throughout the fall.

Raccoons are the most abundant and important furbearer in Mis-

souri, and 'coon hunting is a strong tradition throughout the state. Local populations fluctuate widely at times due to distemper outbreaks and annual weather conditions.



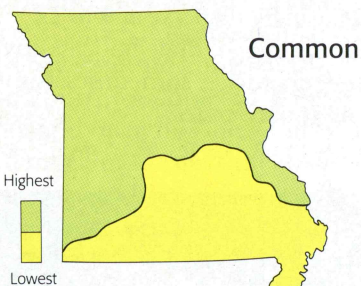
Maslowski Photo

Red Fox

Vulpes vulpes

Order Carnivora, family Canidae.

There is some question whether the red fox is native to North America, or originated from the European red fox, which was introduced into the southeastern United States and New England around 1750. Red foxes are also native to Europe and Asia.



Characteristics: The red fox is a small, long-legged predator that weighs between 8 and 12 pounds, has reddish-yellow fur, black legs and ears and a bushy tail tipped with white.

Habits: There probably isn't another animal with as much written about it as the red fox. Often known as "Br'er fox" or Reynard, this little canine is cunning and elusive. It is also an opportunist, and although primarily a carnivore, will

eat a wide variety of insects, fruits, snakes, birds, eggs and carrion. In fall and winter it specializes in eating rabbits and mice. It lives in a variety of habitats, but does best in the edges between habitats, except inside coyote territories. Coyotes compete with foxes and will sometimes kill them.

Red foxes are normally solitary in fall and early winter, but will form a pair bond that lasts through the entire breeding season, and the male helps feed the four to six young by bringing prey back to the den.

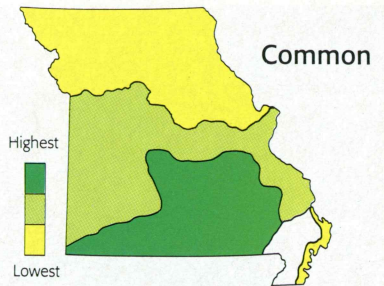
The red fox is primarily nocturnal, and also hunts in the early morning and evening. The fox is an excellent mouser, preferring to stalk and pounce its prey. It is also known as a predator of duck and other ground nesting bird's nests. The red fox is susceptible to sarcoptic mange, which can limit its numbers, and sometimes is subject to rabies.

Gray Fox

Urocyon cinereoargenteus

Order Carnivora, family Canidae.

Characteristics: The gray fox is slightly smaller than the red fox. It stands about 15 inches at the shoulder and weighs 7 to 10 pounds. The grizzled appearance of the back and sides results from individual guard hairs which are banded with white,



gray and black. Black-tipped hairs in the middle of the back form a dark stripe which ends in a conspicuous black mane of coarse hair on the top of the black-tipped tail. The reddish areas under the throat, sides of the neck and on the legs, and the white cheeks make for a strikingly handsome animal.

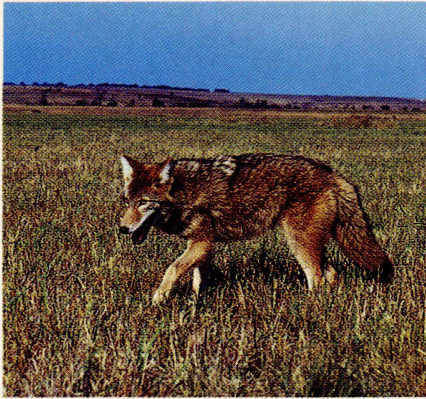
Habits: Gray foxes live in wooded, brushy and rocky habitats. They prey primarily on rabbits, but also eat small rodents, and also insects, persimmons, grapes, apples and even corn. Gray foxes are also nocturnal, and will stay in a protected den or brushy area during the day.

Gray foxes are monogamous (one mate), and the male will also help in the denning activities. Gray foxes use urine and feces in communication, and breed in late January and February. Three to five young are born in spring.

Gray foxes are excellent tree climbers, and will climb to find food, to rest and to escape predators.



Jim Rathert

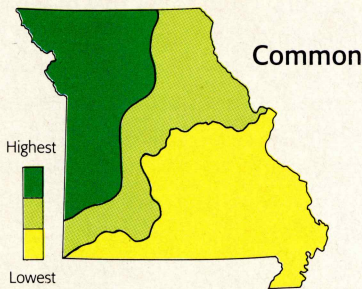


Jim Rathert

Coyote

Canis latrans

Order Carnivora, family Canidae.



This is the largest and most abundant predator in Missouri. Extremely doglike in appearance, the coyote is considered to be a close relative of the gray wolf.

Characteristics: An adult coyote is smaller than a gray wolf, and resembles a small German shepherd dog with erect ears, pointed muzzle and bushy tail. Coyotes are usually tan, gray, or reddish brown with lighter underparts. They have long legs and are fast runners. Coyotes are 35 to 45 inches in length and weigh between 20 and 35 pounds.

Habits: The coyote is an adaptable predator, and now lives in a variety of habitats, although it is most numerous in grasslands and brushy farmland. The coyote is an opportunistic predator and will eat a variety of foods, including 56 different animals and 28 plant foods in Missouri. Most important are rabbits, various rodents, deer, sheep, Canada geese, lizards and grasshoppers. Coyotes also will eat fruits, including watermelons and can-

taloupes, and even worn leather boots.

Although the coyote will only have one mate per year and may mate with the same coyote in successive years, they may not mate for life. Coyotes breed in late winter and whelp four to nine pups in an excavated den in late April or early May. Pups will stay with the parents until they are six to nine months old. Coyotes communicate with a variety of barks, yips and howls, and sometimes an entire litter will chime in. Urine and feces are also used to communicate, especially in maintenance of territories. Sarcophagous mangle is common among coyotes in some years.

Coyote hunting with hounds is a popular pastime in rural areas of Missouri, as fox hunting once was.

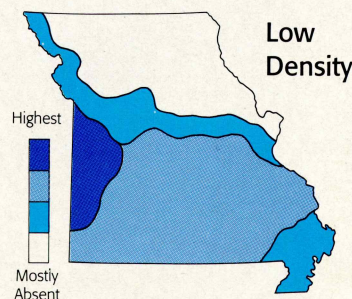


Jim Rathert

Bobcat

Felis rufus

Order Carnivora, family Felidae.



Characteristics: Bobcats stand about twice the size of a domestic cat, with a short tail and muscular,

compact body. Eyes, ears and nose are highly developed as hunting tools. Bobcats are grayish or tawny brown with scattered dark spots, a rufous colored rump, and white underneath with black spots. Males are larger than females, and weigh 20 to 30 pounds. Females weigh 10 to 18 pounds.

Habits: The bobcat is a highly evolved predator possessing sharp, retractile claws and sharp canine teeth. Like most predators, the bobcat is opportunistic and will take nearly anything it can kill, but it is totally a carnivore. It primarily hunts cottontail rabbits, but also eats squirrels, deer fawns and wild turkeys. It is the only wild cat living in Missouri. Sometimes a bobcat will cover a kill with sticks and leaves and return later to feed.

Bobcats can use a variety of habitats, but prefer brushy areas and clearcuts in forests or brushy draws in grasslands. Rocky and broken terrain are favorite haunts and they use rocky ledges and small caves to raise kittens, but also use brush piles, hollow logs and root tangles for concealment.

Breeding takes place in mid-winter, and two to three kittens are born in April or May. Young bobcats usually disperse at 9 to 12 months of age. Male bobcats cover large territories, sometimes as much as 40 square miles.



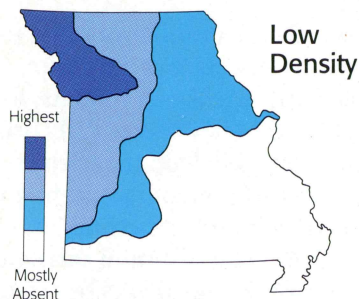
Badger

Taxidea taxus

Order Carnivora, family Mustelidae.

Characteristics: The many unique physical characteristics of the badger, which adapt it for preying on burrowing rodents, make it readily identifiable. Although normally thought of as a Western or Great Plains animal, it occurs over much of northern and western Missouri, but is uncommon. The body of the badger is depressed, with short stout legs having long recurved foreclaws and short shovel-like hind claws.

Characteristic white cheek patches and a white stripe from the nose back to the shoulders are notable. Adults weigh 15 to 20 pounds and have gray, silver-tipped fur and a short, furred tail.



Habits: Badgers prefer open grasslands, but also use farmlands around fencerows. Badgers are most abundant where there are high densities of mice, moles and ground squirrels, which are their primary diet. They excavate numerous ground burrows along fencerows, ditches and open hillsides, and spend much of the daytime underground.

Badgers are active mostly at night. They are solitary except when breeding during August or September. The female has sole responsibility for rearing the three to four young.

Mink

Mustela vison

Order Carnivora, family Mustelidae.

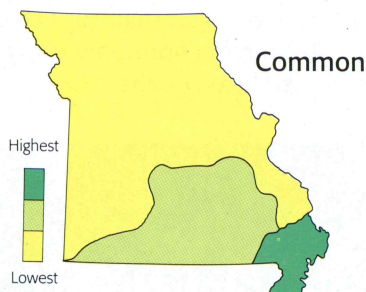
Characteristics: Mink have a long body with short, stout legs. They stand three to four inches at the shoulder. Adults weigh 1.5 to 3.5



Maslowski Photo

pounds, with males significantly larger than females. Mink are considered by many to be the Cadillac of the furbearer world—pelts are usually in high demand.

The pelage is dark brown, usually black at the tip of the tail and white under the chin. Mink, like others in this family, have well developed scent glands at the base of the tail, and produce a strong musky odor.



Habits: Mink are normally found near water, and use streams, swamps, marshes and lakes. During winter months they congregate in the upper portions of streams along the smaller feeder creeks, using dens under the roots, bridge crossings, rock piles and holes in the bank. Males move over longer stretches of streams than do females.

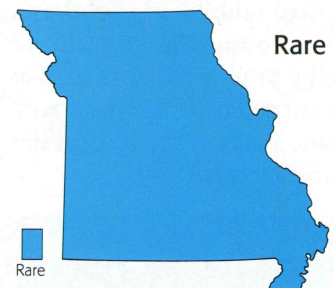
Mink feed in the aquatic systems as well as the adjacent uplands, eating fish and crayfish, small rodents, muskrats, gray squirrels, cottontail rabbits, insects, frogs, snakes and some birds. Females have one litter per year consisting of three to four young. Pesticide contamination can prevent reproduction, and feline distemper is known to cause some mortality.

The majority of mink used in the fur industry comes from a domestic variety that is raised on ranches.

Long-tailed Weasel

Mustela frenata

Order Carnivora, family Mustelidae.



Characteristics: Weasels are slender animals with the typical short legs and low profile of mustelids. They are small, standing only 2 to 3 inches high at the shoulder, and weigh between 3 and 12 ounces. Their fur is brown with white or yellow markings on the underparts. Their fur is occasionally completely white in winter, with a black-tipped tail.

Habits: Weasels, once common in Missouri, are now rare. They use a variety of habitats, but especially edges of fields and woods. They are commonly found close to farm buildings and have been known to raid hen houses.



Maslowski Photo



Glenn D. Chambers

Ounce for ounce, long-tailed weasels are the most aggressive and ferocious predators in Missouri, often killing animals two to three times their size. They are fond of rats, mice, moles, shrews and even cottontail rabbits. Weasels have four to seven young. They are also fed upon by other predators such as great horned owls, hawks, foxes and bobcats. Weasels are susceptible to canine distemper.

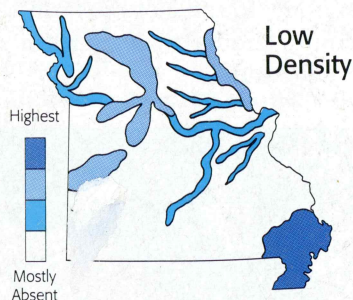


Glenn D. Chambers

River Otter

Lutra canadensis

Order Carnivora, family Mustelidae.



Characteristics: The otter is the largest member of the weasel family found in Missouri, sometimes weighing 25 to 30 pounds. Males are larger than females, and can reach 40 to 55 inches in length, of which one-third is tail. Like others in this group, the otter stands low to the ground, measuring seven to nine inches at the shoulder.

The fur is short and dense, and is dark brown or even blackish, and lighter underneath. The otter uses its webbed hind feet and muscular tail for swimming, and is an effective aquatic predator.

Habits: Otters were once common in all streams and rivers in the state, but were nearly eliminated through unregulated harvests a century ago. Thanks to a restoration effort, otters are again found over a large portion of the state. Over 800 otters were released in the 1980s and early 1990s in Missouri.

The otter is primarily aquatic in its habitat needs. It uses streams, rivers, swamps and oxbow lakes, preferring slow, meandering waters. It is primarily a crayfish predator seven to nine months a year, but also consumes fish and frogs during this time. During the winter, the otter feeds almost totally on fish, especially carp, catfish and suckers. Otters are social, sometimes traveling in family groups or even with unrelated neighbors, covering large areas of a stream. Females whelp two to five young, usually in February or March, commonly using abandoned beaver dens.

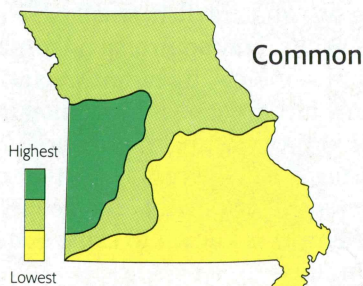


Maslowski Photo

Striped Skunk

Mephitis mephitis

Order Carnivora, family Mustelidae.



Characteristics: There is no confusing this one: starkly marked with

a white stripe on a silky, black body. Skunks are stout, short-legged animals. They usually have a pair of parallel stripes that can vary in width and length. Skunks stand six inches at the shoulder and weigh three to eight pounds. They have a distinctive aroma, dispersed when agitated from a pair of well-developed musk glands.

Habits: Striped skunks use a variety of habitats, but like semi-open farmland and brushy fields the best. They're common around farm yards, and have a bad habit of denning under buildings and houses. Skunks have well-developed claws and dig burrows, but also use rock piles and upturned tree roots for dens.

Skunks are omnivorous and eat primarily insects, but also mice, frogs, bird eggs, small rodents, fruits and berries. They successfully use their spray to defend themselves against most predators, except great horned owls and sometimes bobcats. They are a common carrier of rabies and should always be treated with caution.

Skunks are often killed by vehicles in traffic, especially in spring when emerging from winter dens to breed. The average litter ranges from five to seven young.

Spotted Skunk

Spilogale putorius

Order Carnivora, family Mustelidae.

Characteristics: Spotted skunks, also widely known as civets or civet cats, are small skunks, weighing two to four pounds. Spotted skunks have four to six white stripes starting at the head and breaking up into spots near the rump. They also have sturdy claws for digging. Spotted skunks are infrequently seen and are classified as endangered in Missouri.

Dave Hamilton is a wildlife research biologist with the Conservation Department.

